

ABSTRACT
For
CHANNEL ESTIMATION IN A CELLULAR COMMUNICATION
SYSTEM

A method of channel estimation in a cellular communication system is described. Symbols are transmitted between a mobile station and a base station. According to the described method, an incoming signal is received via a communication channel. A first estimate for the channel impulse response of that communication channel is provided and used to process the incoming signal to generate an estimated data symbol. The estimated data symbol is used to generate a soft output feedback decision which is then used to make a further estimate of the channel impulse response.

According to a variation, the further estimate of channel impulse response is made by performing a correlation process between a conjugate version of a spreading code used to spread the incoming signal and the incoming signal itself. The results of that process are multiplied by a feedback decision.